Patent claims

1. A system of tracking individuals divided into one or more flocks, wherein at least one individual in each flock, from now on called the flock leader, being provided with a first electronic device (1) including a position tracker (2) and radio communication equipment, characterized in that said radio communication equipment includes at least a first transceiver (3) operating in a public radio communication network, and a second transceiver (4) operating in a short distance radio system, at least one other individual belonging to a flock being provided with a second electronic device (6), said second electronic device (6) including at least a third transceiver (7) also operating in the short distance radio system and being arranged to communicate with the second transceiver (4) of said radio communication equipment, each second electronic device being arranged to transmit at least an identification code uniquely identifying said second device to a first electronic device present in the flock through the short distance radio system, thereby indicating the presence of the associated individual in a flock.

2. A system as claimed in claim 1, characterized in a system controller arranged to communicate with the flock leader(s) of each flock through the public radio communication network managing the system and storing system information and information regarding all registered individuals of the system including at least the identity of each individual, to which flock each individual currently belongs, an indication of which individuals being the flock leader(s) of each flock and a public radio communication network address of all the flock leader(s) of the system.

3. A system as claimed in claim 1 or 2, characterized in that the transmission of

at least an identification code uniquely identifying the respective individuals to the flock leader(s) of the flock is accomplished periodically.

4. A system as claimed in claim 1, 2 or 3, characterized in that the first electronic device also includes a memory and a processor for storing at least the identities of the individuals currently associated with the corresponding flock.

5. A system as claimed in any of the preceding claims, characterized in that each electronic device is provided with sensors sensing data regarding the condition of each individual.

6. A system as claimed in claim 5, characterized in that the data is transmitted from the individuals to the associated flock leader together with the identification code and stored in the memory of the respective first electronic device.

7. A system as claimed in one of the claims 2 - 6, characterized in that the system controller includes an application interface allowing a third party or a user of the system to fetch data regarding the individuals.

8. A system as claimed in one of the claims 2 - 7, characterized in that when an individual roams from a first flock to a second flock, the system controller is updated so that the information regarding the flock belonging of the individual is changed from the first flock to the second flock.

9. A system as claimed in one of the claims 2 - 8, characterized in that an alarm is activated for an individual when a predefined time period since last reception of data from the individual to the

flock leader of the individual's associated flock has elapsed and no other flock leader of the system has received data from the individual within the same time period.

10. A system as claimed in claim 9, characterized in that the alarm initiates sending of an e-mail or a short message to a person responsible for the individual for which the alarm is activated.

11. A system as claimed in any of the preceding claims, characterized in that the public radio communication network is a GSM, GPRS, UMTS or WLAN network and the public radio communication network address is a telephone number or an IP address.

12. A system as claimed in any of the preceding claims, characterized in that the position tracker is a GPS receiver.

13. A system as claimed in any of the preceding claims, characterized in that the position tracker obtains its information from the public radio communication network.

14. A system as claimed in any of the preceding claims, characterized in that the short distance radio system is a Bluetooth® system or a system operating in the ISM frequency bands or other open frequency bands like 433 MHz.

15. A system as claimed in any of the preceding claims, characterized in that the individuals are animals.

16. A system as claimed in claim 15, characterized in that the second electronic

device is formed as a collar or a light-weight earmark attached to a respective ear of each animal.

17. A system as claimed in any of the preceding claims, c h a r a c t e r i z e d i n that first electronic devices act as mobile base stations in a dynamic piconet structure of moving coverage areas limited by the coverage areas of the second transceivers of the respective first electronic devices.

18. A method for tracking individuals divided into one or more flocks,
c h a r a c t e r i z e d i n to provide at least one individual in each flock, called the flock leader, with a first electronic device (1), said first electronic device (1) including a position tracker (2), a first transceiver (3) operating in a public radio communication network, and a second transceiver (4) operating in a short distance radio system,
to provide at least one other individual belonging to a flock with a second electronic device (6), said second electronic device (6) including a third transceiver (7) also operating in the short distance radio system,
to transmit from each second electronic device (6) at least an identification code uniquely identifying said second electronic device (6) to a first electronic device (1) present in the flock through the short distance radio system, thereby indicating the presence of the associated individual in a flock.

19. A method as claimed in claim 18,
c h a r a c t e r i z e d i n to communicate from said first electronic device (1) present in each flock with a system controller through the public radio communication network,
said system controller managing the system and storing system information and information regarding all registered individuals of the system including at least the identity

of each individual, to which flock each individual currently belongs, an indication of which individuals being the flock leader(s) of each flock and a public radio communication network address of all the flock leader(s) of the system.

20. A method as claimed in claim 18 or 19, characterized in to transmit periodically at least an identification code uniquely identifying the respective individuals to the first electronic device worn by flock leader(s) of the flock.

21. A method as claimed in claim 18, 19 or 20, characterized in that the first electronic device (1) is storing at least the identities of the individuals currently associated with the corresponding flock.

22. A method as claimed in any of the preceding claims, characterized in that each second electronic device (6) is sensing data regarding the condition of each individual, transmitting said data to the associated first electronic device (1), whereupon the data is stored in a memory in said first electronic device.

23. A method as claimed in one of the claims 19 - 22, characterized in that when an individual roams from a first flock to a second flock, the system controller is updated so that the information regarding the flock belonging of the individual is changed from the first flock to the second flock.

24. A method as claimed in one of the claims 19 - 23, characterized in that an alarm is activated for an individual when a predefined time period since last reception of data from the individual to the flock leader of the individual's associated flock has elapsed and no other flock leader of the system has

received data from the individual within the same time period.

25. A method as claimed in claim 24, c h a r a c t e r i z e d i n that the alarm initiates sending of an e-mail or a short message to a person responsible for the individual for which the alarm is activated.